

FACULTY FELLOWSHIP AWARDS
Three Year Award: 2009-2012

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Scholarly/Creative Projects:

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Service Projects:

No applications submitted in this category.

*Ethics-related.

Mary Kertzman

Professor of Physics and Astronomy

Expanding the Universe of Astronomy at DePauw

In recent years the department of Physics and Astronomy has noted an increasing interest in astrophysics among our majors. We also have a number of non-science majors who take the introductory astronomy courses and ask for more. In our recent self study, the external review team recommended we add astronomy and astrophysics minors to our departmental curriculum. This proposal is to develop two new courses needed for these minors. The first course, "Observational Methods in Astronomy" is crucial for both the astronomy and the astrophysics minor, and will be a required course for both. The second proposed course, "Astrophysics II," would add some breadth to our astrophysics offerings, support research done by several faculty members, and give a small amount of choice in courses for students who complete the astrophysics minor.

David Gellman
Professor of History

The Jay Family and American Slavery—Three Chapters of a Book Manuscript

My Faculty Fellowship will allow me to continue work on my multi-generational study of founding father John Jay's family, the family's slaves, and the family's relationship to the issues of race and bondage across parts of four centuries. From colonial slaveholding, to the advocacy and practice of gradual emancipation, to full-throated polemics for immediate abolition, to the defense of fugitives and the embrace of Civil War, to social criticism of early twentieth century racial violence, members of the Jay family wove themselves into some of the nation's most interesting and important controversies and crises. During my fellowship, I will write three chapters of a book manuscript. These chapters will focus upon two key figures in my broader narrative—John Jay's son William Jay and his grandson John Jay II. Specifically, I will probe the later stages of William Jay's life--during which he wrote some of his most searing indictments of American slavery while reflecting poignantly as well on issues such as peace, racism, social class and religion. I will also investigate the emergence of John Jay II as an abolitionist, as a striver for place and status amongst New York's elite, and as keeper of the family's historical reputation. As in prior chapters, I will investigate the reality that slavery's legacy was—and never could be—a mere abstraction for the Jays, in part because the last of the family's former slaves, Zilpah Montgomery, continued to live with and serve the family. In telling this story, the chapters probe the transmission and transformation of political, moral, and familial values during the sectional crisis and during the Civil War which brought a legal end to slavery, while leaving the meaning of race in American history unresolved.

Wade Hazel

Professor of Biology

Natural Selection on the Timing of Diapause in Swallowtail Butterflies

In temperate zone insects, diapause defines a state of low metabolic activity and resistance to environmental stress. It occurs at a specific time during the insect life cycle and is initiated in response to environmental cues that precede and are correlated with the onset of unfavorable environmental conditions. In insects capable of producing multiple generations during the late spring and summer, the timing of entry into diapause is extremely important. In general, for any given year the optimum time for entry into diapause is slightly more than one generation before the onset of inhospitable conditions. Individuals entering diapause before this time will have lost the opportunity to produce diapausing progeny during that summer, while individuals failing to enter diapause at or before the optimum will have no progeny in diapause before conditions deteriorate and hence no descendants alive during the following season. Therefore, natural selection is expected to mould the timing of diapause so that it is close the optimum. Numerous lines of evidence, such as latitudinal differences in diapause timing and long term changes in timing due to climate change, are consistent with this expectation. However, no studies have examined the short term response of diapause timing to selection. We have developed a technique that allows caterpillars to be reared in the field in mesh bags and a quick evaluation of whether the pupae produced are in diapause. Preliminary data from two field seasons indicate that this method is capable of detecting shifts in diapause timing. In addition, we have developed a population genetic model that will allow us to determine whether the observed shifts are due to natural selection. Hence, I propose to investigate the short term response of diapause timing to selection in the field using local swallowtail butterflies over three years.

Matthew Hertenstein

Associate Professor of Psychology

Emotional Development in Infancy

One of the most significant developments in the emotional life of the infant is social referencing. Broadly construed, social referencing occurs when infants regulate their behavior toward an undefined object or event as a function of the emotional expressions of another. The typical social referencing study involves placing infants in a situation of uncertainty, such as in proximity of an unusual object. In such situations, an adult displays an emotional expression about the novel object to infants and, of interest, is how infants regulate their expressive and instrumental behaviors toward the object as a function of the adult emotional expression. Social referencing represents one of the major mechanisms by which infants come to understand the world around them.

The current proposal revolves around the phenomenon of social referencing and three distinct goals comprise the current proposal. The first goal is to analyze data and draft a manuscript based on an NIH external grant. Infants watch over 500 hours of television a year despite the *American Academy of Pediatrics*' recommendation that children under the age of 2-years-old not watch television of any kind. The impact of the recent and rapid introduction of television programs and videos for children under two cries out for empirical study. Thus, the first goal is to publish data examining what infants understand about televised emotional displays. The second goal is to analyze data and write a manuscript examining one of the cognitive constituents of social referencing: Joint visual attention (JVA). JVA is simply defined as looking where someone else is looking. Our study and paper will address whether infants who engage in JVA can also engage in social referencing. The final goal is to write a synthetic theoretical and empirical article of social referencing. These "hang" together as a package in that they all involve a fundamentally important phenomenon.

Carl Huffman

Professor of Classical Studies

An Edition and Translation of Fragments 69-139 of Aristoxenus of Tarentum

My goal is to complete an edition and translation of the fragments of the ancient Greek philosopher, Aristoxenus of Tarentum. Aristoxenus (370-300 B.C.) was an important figure in the golden age of Greek philosophy. He began by studying with Pythagoreans in his native Tarentum, a Greek city in southern Italy, but then came to Athens and joined Aristotle's Lyceum, where he became a leading candidate to succeed Aristotle as head of the school. He had a staggering output of over 400 books, although most only survive in fragments. Aristoxenus is most famous for his writings on Greek musical theory. By the start of my faculty fellowship, I will have completed the edition and translation of Fragments 1-68 of Aristoxenus; during the faculty fellowship I will do the edition and translation of Fragments 69-139 and thus complete the edition of all the fragments. The edition and translation of these fragments will be contained in Volume 16 of a series of volumes on members of Aristotle's school published as part of the Rutgers University Studies in Classical Humanities. The editions in this series are the standard editions for the fragments of philosophers in Aristotle's school. My edition will replace the earlier German edition of Wehrli as the basis for all future scholarship on Aristoxenus. Fragments 69-139 cover a wide variety of topics including comments on Greek tragedy, Greek musical instruments, Aristoxenus' theory of the human soul and the famous story of Plato's attempt to burn the works of the atomist philosopher, Democritus.

Michael Mackenzie

Associate Professor of Art

Otto Dix, Grotesque Realism, and the Language of the Trenches

Otto Dix was a painter noted for his dramatic combination of great technical facility and difficult, grotesque imagery, and for the striking precision and biting critical realism with which he represented some of the most difficult social characters and scenarios of early twentieth century Germany: the experience of the trenches in World War I; disabled veterans on the city streets after the War; and the contradiction between high-society and widespread prostitution in the cities of Germany after the War. Dix represented the world around him in merciless detail, and his work has conventionally been understood as social critique. Therefore, his depictions of the War, in all its gruesome detail, have long been read as a kind of anti-war protest. I will offer a very different interpretation. I will argue that the grotesque details of his imagery served a very different purpose: to signal his solidarity with other German veterans of World War One, for whom a humorous, grotesque realism served as a kind of coded language constituting a distinct sub-culture set apart from wider, more polite society. As recent historical scholarship has revealed, for the German veterans in the inter-war period, the memories of the war were not necessarily a source of bitterness and disillusionment, as has long been assumed, but rather a more ambiguous stance which included pride and identity, both individual and communal. Thus, Dix's grotesque representations must be understood as ambivalent, even positive representations of the War and his own experience of it. Of course, this celebration of the war experience had implications for the resurgence of militarism and aggression in Nazi Germany, which in turn raises the stakes for any reinterpretation of Dix's war images. My Faculty Fellowship project will be to continue researching and writing this book, and to prepare the manuscript for publication.

Sherry Mou

Associate Professor of Modern Languages

A Book Proposal: Through the Confucian Lens

This is the second half my book-length study on Confucianism in contemporary Chinese films. Tentatively entitled *Through the Confucian Lens: The Literati Tradition and Contemporary Chinese Film*, it makes a historical analysis of contemporary Chinese film from various angles. “How do women treat historical topics?” is the main theme for the first part of this project. It examines the Hong Kong woman director Mabel Cheung’s *The Soong Sisters* (1997), a film depicting the three Soong sisters during the first half century of their lives in the twentieth century. My study will also bring in two other fictional works on the Soong sisters as a comparison: *Walking the Path to the End of the Sky* (《行道天涯》), a novel on Qing-ling Soong, the second Soong sister and widow of Dr. Sun Yat-sen, the founding father of the Republic of China; and “Letters on the 100th Birthday” (“Bai ling jian”), a short story on May-ling Soong (aks. Mm. Chiang Kei-shek), the third and youngest of the Soong sisters. The second and third parts will be the writing of the introduction and conclusion of the book.

Matthew Oware

Associate Professor of Sociology and Anthropology

A Sociological Analysis of Rap, Race, and Politics

This project examines the intersections and representations of race, class, and gender in contemporary rap music lyrics. One manuscript will examine how black motherhood and fatherhood (and the black family in general) are discussed by rap artists, given that rap music has been viewed by many as violent, misogynistic, and anti-family. Another paper will explore the possibility that the “political” rap lyrics found in "conscious" rap can and should be considered an extension of the civil rights and black power movements’ rhetoric.

Greg Schwipps

Assistant Professor of English

Pretty Country: A Novel

I am obsessed with rivers and the people who live along them. My next novel currently exists mostly in my mind as a series of characters, images and ideas, but the setting is very clear: it will take place in the homes and hollows bordering a river in Southern Indiana. *What This River Keeps*, my first novel, revolves around a family, a river, a bottomland farm, and the arrival of an earthen dam, compliments of the U.S. Army Corps of Engineers. At its center is an old man, a farmer and fisherman, a character I had been working with for over ten years. During the process of writing the book a water dog became another central character. I am now in the earliest stages of writing another novel, and I intend for this one to be about a lost child, the manufacture of methamphetamine, and a dog. *What This River Keeps* has dark forces at work within it, and what could pass for a villain. But I would like to examine to what depths an entirely evil character could plumb in my next manuscript.

Meth has a particular hold in the central parts of this country, and it roots in rural areas. Meth is cooked where my characters live, so it makes sense to bring the drug and its users into my next novel. (It is especially prevalent along rivers in southern Indiana and Illinois.) This novel will be connected to the creation and sale of methamphetamine, and its effects on those close by. This novel will also be about brothers. I imagine two brothers, both meth cooks and users, in their early twenties and nearly rudderless. One of them is further gone, more disconnected and more paranoid of the world around him. He lives alone on a ridge out in the woods in a trailer with tarp-covered windows. He cooks in a bunker underground, a shelter left from the Cold War era. What if a lost child stumbled across this lair? What if that man had no intent to return her? Could his brother stop him from completing this act? How far would he go to prevent it?

Barbara Steinson
Professor of History

'Making Do': Essays on Gender and Rural Life in Indiana, 1960-1960

This Faculty Fellowship for the academic years 2009-2012 will enable me to complete and reconceptualize my research and writing on gender and rural life in Indiana. Initially conceived as a project spanning the years from 1880-1950 and later expanded to cover the period 1870-1980, I envisioned my final product as a conventional historical monograph with chapters that essentially followed a chronological format. It has become increasingly clear that the more appropriate format for this project is a collection of topical essays spanning the period 1860-1960. A volume of essays allows me to highlight such topics as sexuality and courtship from 1860-1880, patterns of gendered work sharing and community life from 1880-1930, rural women's associational activities in the early Twentieth Century, conflict and cooperation between professional home economists and rural women from 1915 to 1950, the diverse ways in which the Great Depression and World War II affected rural life, and the flexibility of home extension programs in the postwar period. A series of essays offers the possibility of sharper analytical focus on a smaller range of topics as well as the opportunity to incorporate more voices of rural men and women. I believe that this change in format will simultaneously make the work more satisfying to scholars in several fields of history (women, gender, rural, Midwest, 20th century) and will expand its appeal to a wider audience, including college students.

Janet Vaglia

Associate Professor of Biology

Continual Addition of Posterior Tail Segments Across Life Stages in the Two-Lined Salamander

Continual addition of posterior tail segments beyond the embryonic period is a little known and little understood phenomenon. Research to date suggests that continual elongation is unique to few groups of organisms, such as salamanders and lizards. *Why* it is limited to these particular groups is unknown. The immediate goal of my research is to explore how the tail elongates across life stages (embryo, larval, and adult) in a non-model salamander species, *Eurycea cirrigera* (two-lined salamander). The central hypothesis is that the ability to continuously add tail segments post-embryonically is functionally related to the ability to regenerate the tail. Post-embryonic addition of segments suggests that the tail tip retains at least some aspects of embryonic cell/tissue organization and gene expression throughout the life cycle. Knowledge of how the spinal cord and other tissues continue to develop, and which, if any, *Hox* genes are expressed in the continually elongating tail tip could eventually reveal important mechanisms that underlie the process of regeneration.

This fellowship project will focus on how the adult salamander tail may or may not add segments differently from that of developing embryos. Embryos, and other life stages of *E. cirrigera* will be collected annually in the field and maintained in laboratory environmental chambers. Data collection will involve standard techniques such as histology, antibody staining and molecular probe construction to visualize axial segmentation and vertebral number, and to describe development of tail tip tissues such as the spinal cord. Preliminary results from this research will be used to prepare a scientific paper for submission, to give talks at national conferences, and to enhance the research and classroom experiences of science students at DePauw.

Erik Wielenberg

Associate Professor of Philosophy

Moral Knowledge and the Scientific Study of the Human Mind

Most of us include various moral claims among the things we think we know; that Hitler, for example, performed some morally wrong actions during the 1940s seems as obvious to us as that the earth is not flat. However, a number of contemporary thinkers argue that the scientific study of the human mind increasingly threatens the very idea of moral knowledge by revealing the nature of the processes that generate our moral beliefs. The cognitive scientist/philosopher Josh Greene says that "[u]nderstanding how we make moral judgments might help us to determine whether our judgments are perceptions of external truths or projections of internal attitudes," and favors the latter option. The philosopher of science Michael Ruse bluntly declares: "[M]orality is a collective illusion foisted upon us by our genes." Thus, theories and discoveries in fields such as cognitive science, neuroscience, anthropology, and evolutionary psychology have inspired assorted "debunkings of morality." The debunkers of morality argue that science teaches us that there is no such thing as moral knowledge -- knowledge of rightness and wrongness, good and evil.

My project addresses this question: What do the results of the scientific investigation of the human mind reveal, if anything, about whether human beings possess moral knowledge? As a philosopher, I will focus on claims about the philosophical implications of various ideas emerging from the scientific study of the human mind. While my hope is that the various threats to moral knowledge can be defused -- I hope to debunk the debunkers -- I do not know in advance how this project will turn out. I will do my best to follow the evidence wherever it leads. (This goal might seem admirable -- but if the debunkers are right, no one knows that anything is admirable. Let us hope that they are wrong).

Ophelia Goma

Associate Professor of Economics and Management

The Asian Economic Perspective

The overall purpose of this faculty fellowship is to engage in a focused study on Asian economic development. Specifically, this project involves a two-fold objective, one with a curricular component and the second involving a research component. For the curricular component, I plan to develop a new course focusing on Asian development. I also intend to develop a research paper on gender gaps and human capital investment in Asia. Through this research paper, I hope to examine the impact of gender gaps in education on economic development in this region and comment on the priorities for public policy designed to promote gender equity in Asia.

Gloria Childress Townsend
Professor of Computer Science

Using Robots to Bridge the Academic Divide Between DePauw University and Putnam County

The project creates an upper-level Robotics course for the Computer Science Department, aiding in the expansion of hardware and digital logic concepts throughout the computing curriculum. Also, because the literature of gender issues in computing points to the benefits of robotics for attracting women and girls to computer science (where women are alarmingly underrepresented), the course aids in developing strategies for recruiting and retaining girls and women. Planning and implementation of a service learning component accompanies the project, involving local-area middle school and high school students – where the DePauw University Robotics students showcase the results of their robotics projects for middle school and high school students – creating a recruitment dimension for the project. In addition, the project includes collaboration of the DePauw University Women in Computer Science organization with the service learning presentations, linking to both recruitment and retention, because the additional women serve as role models for the young girls, and their participation in the service learning project (and subsequent outreach projects independent of the Robotics class) may assist in their own retention. Recruitment and retention efforts emerge as critical components of the project, due to the national decline of women in computing. Computer science continues to be the only science in which the percent of female undergraduate majors diminishes instead of increases, hovering at approximately fifteen percent at this point in time.

The statistical portion of the project involves pre- and post-test evaluation of students involved in the service learning project – DePauw University students, middle school students and high school students. A paper written for an audience concerned with computer science pedagogy follows the collection of data, describing the course, the service learning project, the data collected and the data analysis, results and conclusions.